

REMARKS

Claims 68-84 were pending in the application at the time the present Office Action was mailed on January 18, 2006. Claims 68 and 76 have been amended. Claims 68-84 remain pending in the present application.

In the Office Action, claims 68-84 were rejected. More specifically, the status of the claims in view of this Office Action is as follows:

(A) Claims 68 and 69 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,778,693 to Jones et al. ("Jones") in view of U.S. Patent No. 5,579,887 to Leibur et al. ("Leibu");

(B) Claims 70 and 71 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Jones et al. in view U.S. Patent No. 5,321,242 to Heath, Jr. ("Heath");

(C) Claims 72-74 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Jones in view of U.S. Patent No. 3,048,251 to Bower ("Bower");

(D) Claim 76 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Jones in view of Leibur and further in view of U.S. Patent No. 4,836,352 to Tateno et al. ("Tateno") and still further in view of U.S. Patent No. 5,745,706 to Wolfberg et al. ("Wolfberg");

(E) Claims 77-80 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Jones in view of Tateno and further in view of Wolfberg and still further in view of U.S. Patent No. 5,936,541 to Stambler ("Stambler");

(F) Claims 81-83 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Jones in view of Tateno and further in view of Bower;

(G) Claims 68, 69, and 75 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 4,733,765 to Watanabe ("Watanabe") in view of U.S. Patent No. 4,556,140 to Okada ("Okada") and still further in view of Jones; and

(H) Claims 76 and 84 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Watanabe in view of Okada and further in view of Jones and further in view of Tateno and still further in view of Wolfberg.

A. Response to the Section 103 Rejection of Claims 68 and 69

Claims 68 and 69 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Jones in view of Leibu. As described below, the combination of Jones and Leibu fails to support a *prima facie* case of obviousness because these references fail to disclose or suggest all of the features of these claims. More specifically, the combination of Jones and Leibu fails to disclose or suggest a high frequency winding coupled to a core *that is closer to at least one of the end portions of the core* than a low frequency winding.

1. Claim 68 is Directed to a Coin Counting Machine That Includes, *Inter Alia*, a Coin Sensor Having a Magnetic Core With Substantially Opposing End Portions Defining a Gap, the Sensor Also Includes a High Frequency Winding that is Closer to At Least One of the Opposing End Portions of the Core than a low frequency winding

Independent claim 68 is directed to a coin counting machine that includes, *inter alia*, a coin input region and a coin sensor configured to discriminate between acceptable and unacceptable coins. The coin sensor includes a magnetic core having substantially opposing end portions defining a gap through which a portion of the coins from the coin input region move. The coin sensor also includes a low frequency winding coupled to the core and a high frequency winding coupled to the core, where the high frequency winding is closer to at least one of the end portions than the low frequency winding. The coin sensor further includes a processing device and a communication facility operably connected to the processing device.

2. Jones Discloses a Coin Sensor with a Non-Magnetic Cylindrical Core Having Windings That are the Same Distance from the Non-Opposing Ends of the Core

Jones teaches a currency processing system having a disk-type coin sorter. As illustrated in Figure 61, the disk-type coin sorter includes a plurality of coin sensors D1-D6 positioned adjacent to corresponding coin slots 1527-1532. The coin sensor D1-D6 is shown in section view in Figure 64 of Jones. As this Figure shows, the coin sensor 1710 appears to be straight and cylindrical in shape having a non-magnetic ceramic core 1748. The sensor further includes an excitation coil 1712, a proximal detection coil 1722 and a distal detection coil 1724 that surround the core 1748. Notably, the excitation coil 1712 and detection coils 1722 and 1724 appear to be of equal distance from the ends of the non-magnetic, cylindrical core.

3. Leibu Discloses a Coin Detection Apparatus Including a Coin Sensor Having a Core with a Straight Winding Shaft and Windings that are of Equal Distance from the Ends of the Core

Leibu teaches a coin detection apparatus having a generally straight core with windings that are of equal distance from the ends of the core. As illustrated in Figure 4, the core 20 includes a winding shaft 22 having a first end 24 and a first winding area 30, a second end 26 and a second winding area 32, and a post 28 to facilitate reversing direction of the winding between the first and second winding areas. Leibu teaches overlapping the winding coils by first winding the sensing coils S1 and S2 over the core and then winding the driving coils D1 and D2 over the sensing coils S1 and S2 so that all of the leads from the coils extend from the same first end of the winding shaft. (See, generally, Leibu 3:9-48.) As such, it appears that the core of Leibu is covered in equal amount by each of the windings, where the windings are the same distance from the end portions of the core.

4. Claim 68 is Patentable Over Jones in View of Leibu for at Least the Reason that Neither Jones nor Leibu Disclose or Suggest a High Frequency Winding

Being Closer to at Least One of the End Portions of a Core Than a Low Frequency Winding

The combination of Jones and Leibu fails to disclose or suggest a coin counting machine, including, *inter alia*, "a magnetic core having substantially opposing end portions defining a gap through which a portion of the coins from the coin input region move, wherein the sensor includes a low frequency winding coupled to the core and a high frequency winding coupled to the core, wherein the high frequency winding is closer to at least one of the end portions than the low frequency winding," as recited in claim 68. In contrast, the windings of Jones and Leibu are located at the same distance from the ends of the core. In fact, Leibu teaches away from this feature of claim 68. For example, Leibu states that an "...object of the present invention is to provide a differential type sensing unit in which all of the leads extend from one end of the sensing unit core..." (Leibu 2:46-48.) As such, it would frustrate at least one purpose of Leibu's invention to have a high frequency winding closer to at least one of the end portions of a core than a low frequency winding. Accordingly, the combination of Jones and Leibu fails to disclose or suggest all of the features of claim 68, and the rejection of claim 68 should be withdrawn.

The rejection of claim 68 should be withdrawn for at least one additional reason. Neither Jones nor Leibu discloses a magnetic core having substantially opposing end portions defining a gap through which a portion of the coins from the coin input region move. In contrast to these features of claim 68, Jones and Leibu only disclose generally straight cores that do not have opposing end portions defining a gap. Accordingly, the combination of Jones and Leibu fails to disclose or suggest all of the features of claim 68, and the rejection of claim 68 should be withdrawn for at least this additional reason.

Claim 69 depends from base claim 68. Therefore, claim 69 is patentable over Jones in view of Leibu for at least the reasons discussed above and for the additional features of claim 69. Accordingly, the rejection of claim 69 should be withdrawn.

B. Response to the Section 103 Rejection of Claims 70 and 71

Claims 70 and 71 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Jones in view of Heath. Claims 70 and 71 depend from base claim 68. As discussed above, Jones cannot support a Section 103 rejection of base claim 68 for at least the reason that Jones fails to disclose or suggest the coin sensor of base claim 68. Further, Heath fails to cure the deficiencies of Jones with regard to at least claim 68. Accordingly, the combination of Jones and Heath cannot support a Section 103 rejection of dependent claims 70 and 71 for at least the reason that these references cannot support a Section 103 rejection of corresponding base claim 68, and for the additional features of these dependent claims. Therefore, the rejections of claims 70 and 71 should be withdrawn.

C. Response to the Section 103 Rejection of Claims 72-74

Claims 72-74 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Jones in view of Bower. Claims 72-74 depend from base claim 68. For the reasons discussed above, Jones cannot support a Section 103 rejection of base claim 68. Further, Bower fails to cure the deficiencies of Jones with regard to at least claim 68. Accordingly, the combination of Jones and Bower cannot support a Section 103 rejection of dependent claims 72-74 for at least the reason that these references cannot support a Section 103 rejection of corresponding base claim 68, and for the additional features of these dependent claims. Therefore, the rejections of claims 72-74 should be withdrawn.

D. Response to the Section 103 Rejection of Claim 76

Independent claim 76 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Jones in view of Leibui and further in view of Tateno and still further in view of Wolfberg. Claim 76 has, *inter alia*, coin sensor features generally similar to independent claim 68. Accordingly, the combination of Jones and Leibui cannot support a Section 103 rejection of claim 76 for at least the reason that the combination of Jones and Leibui fails to disclose or suggest the coin sensor of claim 68. Further, Tateno and Wolfberg fail to cure

these deficiencies of Jones and Leib. Accordingly, the combination of Jones, Leib, Tateno, and Wolfberg cannot support a Section 103 rejection of claim 76 for at least the reason that these references fail to disclose or suggest the coin sensor features of claim 76, and for the additional features of claim 76. Therefore, the rejection of claim 76 should be withdrawn.

E. Response to the Section 103 Rejection of Claims 77-80

Claims 77-80 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Jones in view of Tateno and further in view of Wolfberg and still further in view of Stambler. Claims 77-80 depend from base claim 76. For at least the reasons discussed above, Jones, Tateno, and Wolfberg cannot support a Section 103 rejection of base claim 76 for at least the reason that these references fail to disclose or suggest the coin sensor of base claim 76. Further, Stambler fails to cure the deficiencies of these references with regard to at least claim 76. Accordingly, the combination of Jones, Tateno, Wolfberg, and Stambler cannot support a Section 103 rejection of dependent claims 77-80 for at least the reason that these references cannot support a Section 103 rejection of corresponding base claim 76, and for the additional features of these dependent claims. Therefore, the rejections of claims 77-80 should be withdrawn.

F. Response to the Section 103 Rejection of Claims 81-83

Claims 81-83 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Jones in view of Tateno and further in view of Bower. Claims 81-83 depend from base claim 76. As discussed above, Jones and Tateno cannot support a Section 103 rejection of base claim 76 for at least the reason that these references fail to disclose or suggest the coin sensor of base claim 76. Further, Bower fails to cure these deficiencies of Jones and Tateno. Accordingly, the combination of Jones, Tateno, and Bower cannot support a Section 103 rejection of dependent claims 81-83 for at least the reason that these references cannot support a Section 103 rejection of corresponding base claim 76, and for

the additional features of these dependent claims. Therefore, the rejections of claims 81-83 should be withdrawn.

G. Response to the Section 103 Rejection of Claims 68, 69, and 75

Claims 68, 69, and 75 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Watanabe in view of Okada and still further in view of Jones. As discussed in more detail below, the combination of Watanabe, Okada and Jones fails to support a *prima facie* obviousness rejection of claim 68 for at least the reason that these references fail to disclose or suggest all of the features of claim 68. More specifically, the combination of Watanabe, Okada, and Jones fails to disclose or suggest a high frequency winding coupled to a core *that is closer to at least one of the end portions of the core* than the low frequency winding.

1. Watanabe Discloses a Cash Handling Machine Configured to Sort Coins Through Holes Corresponding to Coin Dimensions

Watanabe discloses a cash handling machine having a single cash receiver for receiving both bank notes and coins. The cash handling machine includes a hopper 10 and a coin elevator belt 28 that conveys deposited coins to a coin selector 30. The coin selector 30 includes holes of corresponding dimensions (not shown) to different types of coins in order to sort and pass different coins into corresponding storage bins. Watanabe discloses monitoring devices consisting of optical sensors, however as the Examiner noted in the present Office Action, Watanabe does not show a coin sensor having coils and a magnetic core.

2. Okada Discloses an Apparatus for Discriminating Coins and Bank Notes That Includes Two Independent Magnetic Sensors, Only One of Which Receives High Frequency Current

The discriminating apparatus of Okada includes a first magnetic sensor 10. The first sensor 10 includes a single ferrite core 6 with an oscillator 7 that supplies AC current to a coil 8, and a coil 9 that detects a change in the magnetic reluctance in the ferrite core

6. The apparatus in Okada further includes a second magnetic sensor 17 consisting of a coreless coil 15 and an oscillator 16. The oscillator 16 supplies a high frequency current to the coil 15. An eddy current loss is thus produced by the passage of the coin 2 through the coreless coil 15, so that any magnetic material of the coin 2 can be detected. The apparatus of Okada further includes a photosensor 3 consisting of a photocoupler having a light-emitting section and a light-receiving section facing each other in order to detect the size or shape of the coin. Notably, only the second sensor 17 is supplied a high frequency current, and the second sensor 17 only includes one winding.

3. Claim 68 is Patentable Over Watanabe in View of Okada and Further in View of Jones Because Neither Watanabe, Okada, nor Jones Disclose or Suggest a High Frequency Winding that is Closer to at Least One End Portion of a Core Than a Low Frequency Winding

The combination of Watanabe, Okada, and Jones fails to disclose or suggest a coin counting machine, including, *inter alia*, "a magnetic core having substantially opposing end portions...wherein the sensor includes a low frequency winding coupled to the core and a high frequency winding coupled to the core, wherein the high frequency winding is closer to at least one of the end portions than the low frequency winding," as recited in claim 68.

As discussed above and noted by the Examiner in the present Office Action, neither Watanabe or Jones disclose a coin sensor having coils and a magnetic core. Furthermore, Okada fails to cure this deficiency as Okada does not disclose a single sensor having both low and high frequency coils. In contrast, Okada discloses two independent sensors; the first sensor 10 is supplied AC current and the second coreless sensor 17 is supplied high frequency current. Accordingly, Okada fails to disclose a sensor having a high frequency winding that is closer to at least one end portion of a core than a low frequency winding. Moreover, Okada's first sensor 10 cannot reasonably be construed as having a high frequency winding because the coreless second sensor 17 is the only sensor that is supplied high frequency current. Accordingly, the combination of Watanabe, Okada, and Jones fails to disclose or suggest all of the features of claim 68, and the rejection of claim 68 should be withdrawn.

Claims 69 and 75 depend from base claim 68. Therefore, claims 69 and 75 are patentable over Watanabe in view of Okada and further in view of Jones for at least the reasons discussed above and for the additional features of these claims. Accordingly, the rejection of claims 69 and 75 should be withdrawn.

H. Response to the Section 103 Rejection of Claims 76 and 84

Claims 76 and 84 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Watanabe, Okada, Jones, Tateno and still further in view of Wolfberg.

Claim 76 includes, *inter alia*, coin sensor features at least generally similar to independent claim 68. Accordingly, the combination of Watanabe, Okada and Jones cannot support a Section 103 rejection of claim 76 for at least the reason that these references fail to disclose or suggest the coin sensor of claim 68, as discussed above. Further, Tateno and Wolfberg fail to cure the deficiencies of Watanabe, Okada, and Jones with regard to the coin sensor features. Accordingly, the combination of Watanabe, Okada, Jones, Tateno, and Wolfberg cannot support a Section 103 rejection of claim 76 for at least the reason that these references fail to disclose or suggest the coin sensor features of claim 76, and for the additional features of independent claim 76. Therefore, the rejection of claim 76 should be withdrawn.

Claim 84 depends from base claim 76. Therefore, claim 84 is patentable over Watanabe in view of Okada further in view of Jones and further in view of Tateno and still further in view of Wolfberg for at least the reasons discussed above and for the additional features of these claims. Accordingly, the rejection of claim 84 should be withdrawn.

In view of the above amendment, applicant believes the pending application is in condition for allowance. Applicant further believes no fee is due with this response. However, if a fee is due, please charge our Deposit Account No. 50-0665, under Order No. 213828003US10 from which the undersigned is authorized to draw.

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Respectfully submitted,

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